United States Environmental Protection Agency Office of Solid Waste and Emergency Response

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Multi-Media, Multi-Concentration, Organic Analytical Service for Superfund

Office of Emergency and Remedial Response Analytical Operations\Data Quality Center (5204G)

Quick Reference Fact Sheet

Under the legislative authority granted to the U.S. Environmental Protection Agency (EPA) under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) and the Superfund Amendments and Reauthorization Act of 1986 (SARA), EPA develops standardized analytical methods for the measurement of various pollutants in environmental samples from known or suspected hazardous waste sites. Among the pollutants that are of concern to EPA at such sites are a series of volatile, semivolatile, pesticide, and Aroclor compounds that are analyzed using gas chromatography coupled with mass spectrometry (GC/MS) and gas chromatography with an electron capture detector (GC/EC). The Analytical Operations\Data Quality Center (AOC) of the Office of Emergency and Remedial Response (OERR) offers an analytical service that provides data from the analysis of water, soil/sediment, and waste samples for organic compounds for use in the Superfund decision-making process. Through a series of standardized procedures and strict chain-of-custody, the organic analytical service produces data of known and documented quality. This service is available through the Superfund Contract Laboratory Program (CLP).

DESCRIPTION OF SERVICES

The organic analytical service provides a technical and contractual framework for laboratories to apply EPA/CLP analytical methods for the isolation, detection and quantitative measurement of 33 volatile, 64 semivolatile, and 28 pesticide/Aroclor target compounds in water and soil/sediment environmental samples. The analytical service provides the methods to be used and the specific technical and contractual requirements, including quality assurance, quality control, and standard operating procedures, by which EPA will evaluate the data. This service uses GC/MS and GC/EC methods to analyze the target compounds. Two data delivery turnarounds are available to the Regional EPA offices: 35 day turnaround and 14 day turnaround after laboratory receipt of the last sample in the set.

DATA USES

This analytical service provides data which EPA uses for a variety of purposes, such as determining the nature and extent of contamination at a hazardous waste site, assessing priorities for response based on risks to human health and the environment. determining appropriate cleanup actions, determining when remedial actions are complete. The data may be used in all stages in the investigation of a hazardous waste site including site inspections, Hazard Ranking System scoring, remedial investigations/feasibility studies, remedial design, treatability studies, and removal actions. In addition, this service provides data that are available for use in Superfund enforcement/litigation activities.

ANALYTES

The analytes for which this service is applicable and the corresponding baseline quantitation limits are listed in **Table 1**. For water samples, the lowest quantitation limits reportable are 10 ppb for the volatile analytes, 10 ppb for the semivolatile analytes, and 0.05 ppb for the pesticide analytes. For soil samples, the lowest quantitation limits reportable are 10 ppb for the volatile analytes, 330 ppb for the semivolatile analytes, and 1.7 ppb for the pesticide analytes.

Table 1. Target Compound List and Contract Required Quantitation Limits*

Value Low Soil Value Low		Quantitation Limits		Quantitation Limits		
CAPILES		Water	Low Soil		Water	Low Soil
Chloromethane	OLATILES	ug/ =	ug/itg	63 Acenanhthylene		
Bromomethane		10	10			
Vinyl Chloride						
Chioroethane						
Methylene Chloride						
Acetone						
Carbon Disulfide	•					
1,1-Dichloroethene						
1.1-Dichloroethane						
0. 1,2-Dichloroethene (total) 1 0 17. Fluorene 10 330 2. 1,2-Dichloroethane 10 10 74. A-Hirosailine 25 800 2. 1,2-Dichloroethane 10 10 75. 4,6-Dinitro2-methylphenol 25 800 4. 1,1-Trichloroethane 10 10 77. 4-Bromophenyl phenyl ether 10 330 5. Edroen Tetrachloride 10 10 78. Petrachloroebheno 10 330 6. Bromodichloromethane 10 10 79. Pentachlorophenol 25 800 7. 4. Dichlorogroppane 10 10 80. Phenanthrene 10 330 8. cis-1,3-Dichloropropene 10 10 80. Phenanthrene 10 330 9. Dibromochloromethane 10 10 82. Carbazole 10 330 9. Dibromochloromethane 10 10 84. Fluoranthene 10 330 1. 1,1,2-Trichloroethane 10 10 85. Pyrene 10 330 1. 1,2-Trichloroethane 10 10 86. Broz	•			·		
1. Chloroform				. , , ,		
2. 1,2-Dichloroethane				74. 4-Nitroaniline	25	800
4. 1,1,1-Trichloroethane 10 17. 4-Bromophenyl phenyl ether 10 330 6. Bromodichloromethane 10 10 79. Pentachlorophenol 25 800 7. 1-2. Dichloropropane 10 10 80. Phenanthrene 10 30 8. cis-1,3-Dichloropropane 10 10 81. Anthracene 10 330 9. Trichloroethane 10 10 83. Anthracene 10 330 10. Dibromochloromethane 10 10 88. Photylythalate 10 330 1. 1,1,2-Trichloroethane 10 10 88. Fluoranthene 10 330 1. 1,2-Trichloroethane 10 10 86. Butylbenzylphthalate 10 330 3. trans-1,3-Dichloropropene 10 10 86. Butylbenzylphthalate 10 330 4. Promoform 10 10 88. Benzo(a)anthracene 10 330 5. 4-Methyl-2-pentanone 10 10 88. Benzo(a)anthracene 10 330 8. Tollace 10 10 89. Discopph	2. 1,2-Dichloroethane	10	10	75. 4,6-Dinitro-2-methylphenol	25	800
4. 1,1,1-Trichloroethane 10 17. 4-Bromophenyl phenyl ether 10 330 6. Bromodichloromethane 10 10 79. Pentachlorophenol 25 800 7. 1-2. Dichloropropane 10 10 80. Phenanthrene 10 30 8. cis-1,3-Dichloropropane 10 10 81. Anthracene 10 330 9. Trichloroethane 10 10 83. Anthracene 10 330 10. Dibromochloromethane 10 10 88. Photylythalate 10 330 1. 1,1,2-Trichloroethane 10 10 88. Fluoranthene 10 330 1. 1,2-Trichloroethane 10 10 86. Butylbenzylphthalate 10 330 3. trans-1,3-Dichloropropene 10 10 86. Butylbenzylphthalate 10 330 4. Promoform 10 10 88. Benzo(a)anthracene 10 330 5. 4-Methyl-2-pentanone 10 10 88. Benzo(a)anthracene 10 330 8. Tollace 10 10 89. Discopph	3. 2-Butanone	10	10	76. N-nitrosodiphenylamine	10	330
5. Carbon Tetrachloride 10 78. Hexachlorophenee 10 330 7. 1.2-Dichloropropane 10 10 80. Phenanthrene 10 30 8. cis-1.3-Dichloropropane 10 10 80. Phenanthrene 10 330 9. Tickloroethene 10 10 82. Carbazole 10 330 9. Tickloroethene 10 10 82. Carbazole 10 330 1. 1,2-Tichloroethane 10 10 85. Pyrene 10 330 2. Benzene 10 10 88. Pyrene 10 330 3. Trans-1,3-Dichloropropene 10 10 88. Berzocaloanthracene 10 330 4. Bromoform 10 10 88. Berzocaloanthracene 10 330 5 Hekeranone 10 10 88. Berzocaloanthracene 10 330 6 Z- Hexanone 10 10 88. Berzocaloanthracene 10 330 7. Tetrachloroethane 10 10 88. Diversity phthalate 10 330	4. 1,1,1-Trichloroethane	10	10			
7. 12-Dichloropropage 10 10 80. Phenanthrene 10 330 9. Trichloroethene 10 10 10 81. Anthracene 10 330 9. Trichloroethene 10 10 82. Carbazole 10 330 1. 1,1,2-Trichloroethane 10 10 83. Di-n-butyiphthalate 10 330 1. 1,1,2-Trichloroethane 10 10 84. Fluoranthene 10 330 1. 1,1,2-Trichloroethane 10 10 88. Butyibenzyiphthalate 10 330 1. 1,1,2-Trichloroethane 10 10 10 88. Benzo(a)anthracene 10 330 1. 2,4-Methyl-2-pentanone 10 10 10 88. Benzo(a)anthracene 10 330 1. 2,2-Tetrachloroethane 10 10 99. bis(2-Ethylhexyl)phthalate 10 330 1. 2,1,2,2-Tetrachloroethane 10 10 99. Benzo(a)anthracene 10 330 1. 1,1,2,2-Tetrachloroethane 10 10 99. Benzo(a)pyrene 10 330 10. Chlorobenzene 10 10 99. Benzo(a)pyrene 10 330 10. Chlorobenzene 10 10 99. Benzo(a)pyrene 10 330 10. Benzo(a)pyrene 10 330	5. Carbon Tetrachloride	10	10			
7. 1.2-Dichloropropane	6. Bromodichloromethane	10	10	79. Pentachlorophenol	25	800
8. cis-13-Dichloropropene	7. 1,2-Dichloropropane	10	10			
3. Trichoroethene						
10. Dibromochloromethane				82. Carbazole	10	330
1.1,2-Trichloroethane						
2. Benzene						
3. trans-13-Dichloropropene				85. Pyrene	10	330
4. Bromform 10 10 87 3,3°-Dichlorobenzidine 10 330 6. 2-Hexanone 10 10 88. Benzo(a)anthracene 10 330 6. 2-Hexanone 10 10 89. Chrysene 10 330 8. Tratachloroethene 10 10 90. bis(2-Ethylnexyl)phthalate 10 330 9. 1,1,2,2-Tetrachloroethane 10 10 90. bis(2-Ethylnexyl)phthalate 11 330 9. 1,1,2,2-Tetrachloroethane 10 10 92. Benzo(b)fluoranthene 10 330 9. 1,1,2,2-Tetrachloroethane 10 10 92. Benzo(b)fluoranthene 10 330 9. 1,1,2,2-Tetrachloroethane 10 10 93. Benzo(b)fluoranthene 10 330 94. Benzo(a)pyrene 10 330 94. Benzo(a)pyrene 10 330 95. Styrene 10 10 96. Dibenz(a,h)anthracene 10 330 97. Benzo(a)pyrene 10 330 100. delta-BHC 0.05 1.7 1.7 1.2-Dichlorobenzene 10 330 100. delta-BHC 0.05 1.7 1.7 1.2-Dichlorobenzene 10 330 100. delta-BHC 0.05 1.7 1.7 1.2-Poxybis(1-Chloropropane) 10 330 100. delta-BHC 0.05 1.7 1.7 1.2-Pox	23. trans-1,3-Dichloropropene	10	10	86. Butylbenzylphthalate	10	330
6. 2-Hexanone	4. Bromoform	10	10	87. 3,3'-Dichlorobenzidine	10	330
7. Tetrachloroethene	25. 4-Methyl-2-pentanone	10	10	88. Benzo(a)anthracene	10	330
8. Toluene	26. 2-Hexanone	10	10	89. Chrysene	10	330
8. Toluene	7. Tetrachloroethene	10	10	90. bis(2-Ethylhexyl)phthalate	10	330
0. Chlorobenzene	8. Toluene	10	10			
1. Ethylbenzene 10 10 10 94. Benzo(a)pyrene 10 330 330 35. Styrene 10 10 10 95. Indeno(1,2,3-cd)pyrene 10 330 330 35. Mylenes (Total) 10 10 96. Dibenz(a,h.)anthracene 10 330 97. Benzo(g,h.i)perylene 10 330 98. Benzo(g,h.i)perylene 10 330 98. Benzo(g,h.i)perylene 10 330 98. Benzo(g,h.i)perylene 10 330 98. alpha-BHC 0.05 1.7 0.2-Chlorophenol 10 330 98. alpha-BHC 0.05 1.7 0.5 1.7 0.2-Chlorophenol 10 330 100. delta-BHC 0.05 1.7 0.5 1.7 0.2-Chlorophenol 10 330 100. delta-BHC 0.05 1.7 0.2-Methylphenol 10 330 101. gamma-BHC (Lindane) 0.05 1.7 0.2-Methylphenol 10 330 102. Heptachlor 0.05 1.7 0.2-Methylphenol 10 330 103. Aldrin 0.05 1.7 1.2-C-oxybis(1-Chloropropane) 10 330 104. Heptachlor epoxide 0.05 1.7 1.2-C-oxybis(1-Chloropropane) 10 330 105. Endosulfan 1 0.05 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7	9. 1,1,2,2-Tetrachloroethane	10	10	92. Benzo(b)fluoranthene	10	330
2. Styrene	0. Chlorobenzene	10	10	93. Benzo(k)fluoranthene	10	330
3. Xylenes (Total)	1. Ethylbenzene	10	10			
3. Xylenes (Total)	2. Styrene	10	10	95. Indeno(1,2,3-cd)pyrene	10	330
EMIVOLATILES	3. Xylenes (Total)	10	10			
4. Phenol 10 330 PESTICIDES/AROCLORS ug/L ug/L 5. bis(2-Chloroethyl) ether 10 330 98. alpha-BHC 0.05 1.7 6. 2-Chlorophenol 10 330 99. beta-BHC 0.05 1.7 7. 1,3-Dichlorobenzene 10 330 100. delta-BHC 0.05 1.7 8. 1,4-Dichlorobenzene 10 330 101. gamma-BHC (Lindane) 0.05 1.7 9. 1,2-Dichlorobenzene 10 330 101. gamma-BHC (Lindane) 0.05 1.7 1.7 9. 1,2-Dichlorobenzene 10 330 102. Heptachlor 0.05 1.7 1.7 1.2,2'-oxybis(1-Chloropropane) 10 330 103. Aldrin 0.05 1.7 1.2,2'-oxybis(1-Chloropropane) 10 330 104. Heptachlor epoxide 0.05 1.7 1.2,2'-oxybis(1-Chloropropane) 10 330 105. Endosulfan I 0.05 1.7 1.2,4-Methylphenol 10 330 105. Endosulfan I 0.05 1.7 1.7 1.2,4-Methylphenol 10 330 105. Endosulfan I 0.05 1.7 1.7 1.2,4-Methylphenol 10 330 105. Endosulfan I 0.05 1.7 1.7 1.2,4-Methylphenol 10 330 107. 4,4'-DDE 0.10 3.3 1.3 1.5 N. Nitrobenzene 10 330 108. Endrin 0.10 3.3 1.5 N. Hitrobenzene 10 330 109. Endosulfan II 0.10 3.3 1.3 1.5 N. Polytophenol 10 330 109. Endosulfan II 0.10 3.3 1.3 1.5 N. Polytophenol 10 330 110. 4,4'-DDD 0.10 3.3 1.3 1.5 N. Polytophenol 10 330 110. 4,4'-DDD 0.10 3.3 1.5 N. Polytophenol 10 330 110. 4,4'-DDD 0.10 3.3 1.5 N. Polytophenol 10 330 111. Endosulfan sulfate 0.10 3.3 1.5 N. Polytophenol 10 330 111. Endosulfan sulfate 0.10 3.3 1.5 N. Polytophenol 10 330 111. Endosulfan sulfate 0.10 3.3 1.5 N. Polytophenol 10 330 111. Endosulfan sulfate 0.10 3.3 1.5 N. Polytophenol 10 330 111. Endosulfan sulfate 0.10 3.3 1.5 N. Polytophenol 10 330 111. Endosulfan sulfate 0.10 3.3 1.5 N. Polytophenol 10 330 111. Endosulfan sulfate 0.10 3.3 1.5 N. Polytophenol 10 330 111. Endosulfan sulfate 0.10 3.3 1.5 N. Polytophenol 10 330 111. Endosulfan sulfate 0.10 3.3 1.5 N. Polytophenol 10 330 111. Endosulfan sulfate 0.10 3.3 1.5 N. Polytophenol 10 330 111. Endosulfan sulfate 0.10 3.3 1.5 N. Polytophenol 10 330 112. Aroclor-1016 1.0 3.3 1.7 N. Polytophenol 10 330 112. Aroclor-1016 1.0 3.3 1.7 N. Polytophenol 10 330 112. Aroclor-1016 1.0 330 112. Aroclor-1016 1.0 330 112. Aroclor-1014 1.0 33.0 112. Aroclor-1014 1.0 33.0 112. Aroclo				97. Benzo(g,h,i)perylene	10	330
5. bis(2-Chloroethyl) ether 10 330 98. alpha-BHC 0.05 1.7 6. 2-Chlorophenol 10 330 99. beta-BHC 0.05 1.7 7. 1,3-Dichlorobenzene 10 330 100. delta-BHC 0.05 1.7 8. 1,4-Dichlorobenzene 10 330 101. gamma-BHC (Lindane) 0.05 1.7 9. 1,2-Dichlorobenzene 10 330 102. Heptachlor 0.05 1.7 9. 1,2-Dichlorobenzene 10 330 103. Aldrin 0.05 1.7 9. 1,2-Dichlorobenzene 10 330 103. Aldrin 0.05 1.7 9. 1,2-Dichlorobenzene 10 330 103. Aldrin 0.05 1.7 1. 2,2'-oxybis(1-Chloropropane) 10 330 104. Heptachlor epoxide 0.05 1.7 2. 4-Methylphenol 10 330 105. Endosulfan I 0.05 1.7 3. N-Nitroso-di-n-propylamine 10 330 106. Dieldrin 0.10 3.3 4. Hexachloroethane 10 330 107. 4,4'-DDE 0.10 3.3 5. Nitrobenzene 10	SEMIVOLATILES				Water	Soil
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0. 2-Methylphenol 10 330 103. Aldrin 0.05 1.7 1. 2,2'-oxybis(1-Chloropropane) 10 330 104. Heptachlor epoxide 0.05 1.7 2. 4-Methylphenol 10 330 105. Endosulfan I 0.05 1.7 3. N-Nitroso-di-n-propylamine 10 330 106. Dieldrin 0.10 3.3 4. Hexachloroethane 10 330 107. 4,4'-DDE 0.10 3.3 5. Nitrobenzene 10 330 108. Endrin 0.10 3.3 6. Isophorone 10 330 109. Endosulfan II 0.10 3.3 7. 2-Nitrophenol 10 330 110. 4,4'-DDD 0.10 3.3 8. 2,4-Dimethylphenol 10 330 111. Endosulfan sulfate 0.10 3.3 9. bis(2-Chloroethoxy) methane 10 330 112. 4,4'-DDT 0.10 3.3 10. 2,4-Dichlorophenol 10 330 113. Methoxychlor 0.50 17.0 1. 1,2,4-Trichlorobenzene 10 330 114. Endrin ketone 0.10 3.3 2. Naphthalene 10 <	34. Phenol	10 10	330 330 330	98. alpha-BHC	ug/L . 0.05	1.7 1.7 1.7
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4. Hexachloroethane 10 330 107. 4,4'-DDE 0.10 3.3 5. Nitrobenzene 10 330 108. Endrin 0.10 3.3 6. Isophorone 10 330 109. Endosulfan II 0.10 3.3 7. 2-Nitrophenol 10 330 110. 4,4'-DDD 0.10 3.3 8. 2,4-Dimethylphenol 10 330 111. Endosulfan sulfate 0.10 3.3 9. bis(2-Chloroethoxy) methane 10 330 111. Endosulfan sulfate 0.10 3.3 9. bis(2-Chloroethoxy) methane 10 330 112. 4,4'-DDT 0.10 3.3 0. 2,4-Dichlorophenol 10 330 113. Methoxychlor 0.50 17.0 1. 1,2,4-Trichlorobenzene 10 330 114. Endrin ketone 0.10 3.3 2. Naphthalene 10 330 115. Endrin aldehyde 0.10 3.3 3. 4-Chloroaliline 10 330 116. alpha-Chlordane 0.05 1.7 4. Hexachlorobutadiene 10 330 117. gamma-Chlordane 0.05 1.7 5. 4-Chloro-3-methylphenol	34. Phenol	10 10 10 10 10 10	330 330 330 330 330 330	98. alpha-BHC	ug/L . 0.05	1.7 1.7 1.7 1.7 1.7 1.7
5. Nitrobenzene 10 330 108. Endrin 0.10 3.3 6. Isophorone 10 330 109. Endosulfan II 0.10 3.3 7. 2-Nitrophenol 10 330 110. 4,4'-DDD 0.10 3.3 8. 2,4-Dimethylphenol 10 330 111. Endosulfan sulfate 0.10 3.3 9. bis(2-Chloroethoxy) methane 10 330 112. 4,4'-DDT 0.10 3.3 0. 2,4-Dichlorophenol 10 330 113. Methoxychlor 0.50 17.0 1. 1,2,4-Trichlorobenzene 10 330 114. Endrin ketone 0.10 3.3 2. Naphthalene 10 330 115. Endrin aldehyde 0.10 3.3 3. 4-Chloroaniline 10 330 116. alpha-Chlordane 0.05 1.7 4. Hexachlorobutadiene 10 330 116. alpha-Chlordane 0.05 1.7 4. Hexachlorobutadiene 10 330 118. Toxaphene 5.0 170.0 6. 2-Methylnaphthalene 10 330 119. Aroclor-1016 1.0 33.0 7. Hexachlorocyclopentadiene 10	34. Phenol	10 10 10 10 10 10	330 330 330 330 330 330 330	98. alpha-BHC 99. beta-BHC 100. delta-BHC 101. gamma-BHC (Lindane) 102. Heptachlor 103. Aldrin 104. Heptachlor epoxide 105. Endosulfan I	ug/L . 0.05	1.7 1.7 1.7 1.7 1.7 1.7 1.7
6. Isophorone 10 330 109. Endosulfan II 0.10 3.3 7. 2-Nitrophenol 10 330 110. 4,4'-DDD 0.10 3.3 8. 2,4-Dimethylphenol 10 330 111. Endosulfan sulfate 0.10 3.3 9. bis(2-Chloroethoxy) methane 10 330 112. 4,4'-DDT 0.10 3.3 0. 2,4-Dichlorophenol 10 330 113. Methoxychlor 0.50 17.0 1. 1,2,4-Trichlorobenzene 10 330 114. Endrin ketone 0.10 3.3 2. Naphthalene 10 330 115. Endrin aldehyde 0.10 3.3 3. 4-Chloroaliline 10 330 116. alpha-Chlordane 0.05 1.7 4. Hexachlorobutadiene 10 330 117. gamma-Chlordane 0.05 1.7 4. Hexachloro-3-methylphenol 10 330 118. Toxaphene 5.0 170.0 6. 2-Methylnaphthalene 10 330 119. Aroclor-1016 1.0 33.0 7. Hexachlorocyclopentadiene 10 330 120. Aroclor-1221 2.0 67.0 8. 2,4,6-Trichlorophe	34. Phenol 35. bis(2-Chloroethyl) ether 36. 2-Chlorophenol 37. 1,3-Dichlorobenzene 38. 1,4-Dichlorobenzene 39. 1,2-Dichlorobenzene 40. 2-Methylphenol 41. 2,2'-oxybis(1-Chloropropane) 42. 4-Methylphenol 43. N-Nitroso-di-n-propylamine	10 10 10 10 10 10 10	330 330 330 330 330 330 330 330	98. alpha-BHC 99. beta-BHC 100. delta-BHC 101. gamma-BHC (Lindane) 102. Heptachlor 103. Aldrin 104. Heptachlor epoxide 105. Endosulfan I 106. Dieldrin	ug/L . 0.05	1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7
7. 2-Nitrophenol 10 330 110. 4,4'-DDD 0.10 3.3 8. 2,4-Dimethylphenol 10 330 111. Endosulfan sulfate 0.10 3.3 9. bis(2-Chloroethoxy) methane 10 330 112. 4,4'-DDT 0.10 3.3 0. 2,4-Dichlorophenol 10 330 113. Methoxychlor 0.50 17.0 1. 1,2,4-Trichlorobenzene 10 330 114. Endrin ketone 0.10 3.3 2. Naphthalene 10 330 115. Endrin aldehyde 0.10 3.3 3. 4-Chloroaniline 10 330 116. alpha-Chlordane 0.05 1.7 4. Hexachlorobutadiene 10 330 117. gamma-Chlordane 0.05 1.7 5. 4-Chloro-3-methylphenol 10 330 118. Toxaphene 5.0 170.0 6. 2-Methylnaphthalene 10 330 119. Aroclor-1016 1.0 33.0 7. Hexachlorocyclopentadiene 10 330 120. Aroclor-1221 2.0 67.0 8. 2,4,6-Trichlorophenol 10 330 121. Aroclor-1232 1.0 33.0 9. 2,4,5-Tric	34. Phenol	10	330 330 330 330 330 330 330 330 330	98. alpha-BHC 99. beta-BHC 100. delta-BHC 101. gamma-BHC (Lindane) 102. Heptachlor 103. Aldrin 104. Heptachlor epoxide 105. Endosulfan I 106. Dieldrin 107. 4,4'-DDE	ug/L . 0.05	1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 3.3
8. 2,4-Dimethylphenol 10 330 111. Endosulfan sulfate 0.10 3.3 9. bis(2-Chloroethoxy) methane 10 330 112. 4,4'-DDT 0.10 3.3 0. 2,4-Dichlorophenol 10 330 113. Methoxychlor 0.50 17.0 1. 1,2,4-Trichlorobenzene 10 330 114. Endrin ketone 0.10 3.3 2. Naphthalene 10 330 115. Endrin aldehyde 0.10 3.3 3. 4-Chloroaniline 10 330 116. alpha-Chlordane 0.05 1.7 4. Hexachlorobutadiene 10 330 117. gamma-Chlordane 0.05 1.7 5. 4-Chloro-3-methylphenol 10 330 118. Toxaphene 5.0 170.0 6. 2-Methylnaphthalene 10 330 119. Aroclor-1016 1.0 33.0 7. Hexachlorocyclopentadiene 10 330 120. Aroclor-1221 2.0 67.0 8. 2,4,6-Trichlorophenol 10 330 121. Aroclor-1232 1.0 33.0 9. 2,4,5-Trichlorophenol 25 800 122. Aroclor-1242 1.0 33.0 1	44. Phenol 55. bis(2-Chloroethyl) ether 66. 2-Chlorophenol 67. 1,3-Dichlorobenzene 68. 1,4-Dichlorobenzene 69. 1,2-Dichlorobenzene 69. 2-Methylphenol 61. 2,2'-oxybis(1-Chloropropane) 62. 4-Methylphenol 63. N-Nitroso-di-n-propylamine 64. Hexachloroethane 65. Nitrobenzene	10 10 10 10 10 10 10 10	330 330 330 330 330 330 330 330 330	98. alpha-BHC 99. beta-BHC 100. delta-BHC 101. gamma-BHC (Lindane) 102. Heptachlor 103. Aldrin 104. Heptachlor epoxide 105. Endosulfan I 106. Dieldrin 107. 4,4'-DDE 108. Endrin	ug/L . 0.05	1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 3.3 3.3 3.3
9. bis(2-Chloroethoxy) methane 10 330 112. 4,4'-DDT 0.10 3.3 0. 2,4-Dichlorophenol 10 330 113. Methoxychlor 0.50 17.0 1. 1,2,4-Trichlorobenzene 10 330 114. Endrin ketone 0.10 3.3 2. Naphthalene 10 330 115. Endrin aldehyde 0.10 3.3 3. 4-Chloroaniline 10 330 116. alpha-Chlordane 0.05 1.7 4. Hexachlorobutadiene 10 330 117. gamma-Chlordane 0.05 1.7 5. 4-Chloro-3-methylphenol 10 330 118. Toxaphene 5.0 170.0 6. 2-Methylnaphthalene 10 330 119. Aroclor-1016 1.0 33.0 7. Hexachlorocyclopentadiene 10 330 120. Aroclor-1221 2.0 67.0 8. 2,4,6-Trichlorophenol 10 330 121. Aroclor-1232 1.0 33.0 9. 2,4,5-Trichlorophenol 25 800 122. Aroclor-1242 1.0 33.0 1. 2-Nitroaniline 25 800 124. Aroclor-1254 1.0 33.0	34. Phenol 35. bis(2-Chloroethyl) ether 36. 2-Chlorophenol 37. 1,3-Dichlorobenzene 38. 1,4-Dichlorobenzene 39. 1,2-Dichlorobenzene 40. 2-Methylphenol 41. 2,2'-oxybis(1-Chloropropane) 42. 4-Methylphenol 43. N-Nitroso-di-n-propylamine 44. Hexachloroethane 45. Nitrobenzene 46. Isophorone	10	330 330 330 330 330 330 330 330 330 330 330 330	98. alpha-BHC 99. beta-BHC 100. delta-BHC 101. gamma-BHC (Lindane) 102. Heptachlor 103. Aldrin 104. Heptachlor epoxide 105. Endosulfan I 106. Dieldrin 107. 4,4'-DDE 108. Endrin 109. Endosulfan II	ug/L . 0.05	1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 3.3 3.3 3.3 3.3
0. 2,4-Dichlorophenol 10 330 113. Methoxychlor 0.50 17.0 1. 1,2,4-Trichlorobenzene 10 330 114. Endrin ketone 0.10 3.3 2. Naphthalene 10 330 115. Endrin aldehyde 0.10 3.3 3. 4-Chloroaniline 10 330 116. alpha-Chlordane 0.05 1.7 4. Hexachlorobutadiene 10 330 117. gamma-Chlordane 0.05 1.7 5. 4-Chloro-3-methylphenol 10 330 118. Toxaphene 5.0 170.0 6. 2-Methylnaphthalene 10 330 119. Aroclor-1016 1.0 33.0 7. Hexachlorocyclopentadiene 10 330 120. Aroclor-1221 2.0 67.0 8. 2,4,6-Trichlorophenol 10 330 121. Aroclor-1232 1.0 33.0 9. 2,4,5-Trichlorophenol 25 800 122. Aroclor-1242 1.0 33.0 0. 2-Chloronaphthalene 10 330 123. Aroclor-1254 1.0 33.0 1. 2-Nitroaniline 25 800 124. Aroclor-1254 1.0 33.0	4. Phenol 5. bis(2-Chloroethyl) ether 6. 2-Chlorophenol 7. 1,3-Dichlorobenzene 8. 1,4-Dichlorobenzene 9. 1,2-Dichlorobenzene 0. 2-Methylphenol 1. 2,2'-oxybis(1-Chloropropane) 2. 4-Methylphenol 3. N-Nitroso-di-n-propylamine 4. Hexachloroethane 5. Nitrobenzene 6. Isophorone 7. 2-Nitrophenol	10	330 330 330 330 330 330 330 330 330 330 330 330	98. alpha-BHC 99. beta-BHC 100. delta-BHC 101. gamma-BHC (Lindane) 102. Heptachlor 103. Aldrin 104. Heptachlor epoxide 105. Endosulfan I 106. Dieldrin 107. 4,4'-DDE 108. Endrin 109. Endosulfan II	ug/L . 0.05	1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 3.3 3.3 3.3 3.3
1. 1,2,4-Trichlorobenzene 10 330 114. Endrin ketone 0.10 3.3 2. Naphthalene 10 330 115. Endrin aldehyde 0.10 3.3 3. 4-Chloroaniline 10 330 116. alpha-Chlordane 0.05 1.7 4. Hexachlorobutadiene 10 330 117. gamma-Chlordane 0.05 1.7 5. 4-Chloro-3-methylphenol 10 330 118. Toxaphene 5.0 170.0 6. 2-Methylnaphthalene 10 330 119. Aroclor-1016 1.0 33.0 7. Hexachlorocyclopentadiene 10 330 120. Aroclor-1221 2.0 67.0 8. 2,4,6-Trichlorophenol 10 330 121. Aroclor-1232 1.0 33.0 9. 2,4,5-Trichlorophenol 25 800 122. Aroclor-1242 1.0 33.0 0. 2-Chloronaphthalene 10 330 123. Aroclor-1248 1.0 33.0 1. 2-Nitroaniline 25 800 124. Aroclor-1254 1.0 33.0	34. Phenol 35. bis(2-Chloroethyl) ether 36. 2-Chlorophenol 37. 1,3-Dichlorobenzene 38. 1,4-Dichlorobenzene 39. 1,2-Dichlorobenzene 40. 2-Methylphenol 41. 2,2'-oxybis(1-Chloropropane) 42. 4-Methylphenol 43. N-Nitroso-di-n-propylamine 44. Hexachloroethane 45. Nitrobenzene 46. Isophorone 47. 2-Nitrophenol 48. 2,4-Dimethylphenol	. 10	330 330 330 330 330 330 330 330 330 330 330 330	98. alpha-BHC 99. beta-BHC 100. delta-BHC 101. gamma-BHC (Lindane) 102. Heptachlor 103. Aldrin 104. Heptachlor epoxide 105. Endosulfan I 106. Dieldrin 107. 4,4'-DDE 108. Endrin 109. Endosulfan II 110. 4,4'-DDD	ug/L . 0.05	1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 3.3 3.3 3.3 3.3 3.3
2. Naphthalene 10 330 115. Endrin aldehyde 0.10 3.3 3. 4-Chloroaniline 10 330 116. alpha-Chlordane 0.05 1.7 4. Hexachlorobutadiene 10 330 117. gamma-Chlordane 0.05 1.7 5. 4-Chloro-3-methylphenol 10 330 118. Toxaphene 5.0 170.0 6. 2-Methylnaphthalene 10 330 119. Aroclor-1016 1.0 33.0 7. Hexachlorocyclopentadiene 10 330 120. Aroclor-1221 2.0 67.0 8. 2,4,6-Trichlorophenol 10 330 121. Aroclor-1232 1.0 33.0 9. 2,4,5-Trichlorophenol 25 800 122. Aroclor-1242 1.0 33.0 0. 2-Chloronaphthalene 10 330 123. Aroclor-1248 1.0 33.0 1. 2-Nitroaniline 25 800 124. Aroclor-1254 1.0 33.0	34. Phenol 35. bis(2-Chloroethyl) ether 36. 2-Chlorophenol 37. 1,3-Dichlorobenzene 38. 1,4-Dichlorobenzene 39. 1,2-Dichlorobenzene 40. 2-Methylphenol 41. 2,2'-oxybis(1-Chloropropane) 42. 4-Methylphenol 43. N-Nitroso-di-n-propylamine 44. Hexachloroethane 45. Nitrobenzene 46. Isophorone 47. 2-Nitrophenol 48. 2,4-Dimethylphenol 49. bis(2-Chloroethoxy) methane	10	330 330 330 330 330 330 330 330 330 330 330 330 330	98. alpha-BHC 99. beta-BHC 100. delta-BHC 101. gamma-BHC (Lindane) 102. Heptachlor 103. Aldrin 104. Heptachlor epoxide 105. Endosulfan I 106. Dieldrin 107. 4,4'-DDE 108. Endrin 109. Endosulfan II 110. 4,4'-DDD 111. Endosulfan sulfate	ug/L . 0.05	1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.3 3.3 3.3 3.3 3.3 3.3
3. 4-Chloroaniline 10 330 116. alpha-Chlordane 0.05 1.7 4. Hexachlorobutadiene 10 330 117. gamma-Chlordane 0.05 1.7 5. 4-Chloro-3-methylphenol 10 330 118. Toxaphene 5.0 170.0 6. 2-Methylnaphthalene 10 330 119. Aroclor-1016 1.0 33.0 7. Hexachlorocyclopentadiene 10 330 120. Aroclor-1221 2.0 67.0 8. 2,4,6-Trichlorophenol 10 330 121. Aroclor-1232 1.0 33.0 9. 2,4,5-Trichlorophenol 25 800 122. Aroclor-1242 1.0 33.0 0. 2-Chloronaphthalene 10 330 123. Aroclor-1248 1.0 33.0 1. 2-Nitroaniline 25 800 124. Aroclor-1254 1.0 33.0	34. Phenol 35. bis(2-Chloroethyl) ether 36. 2-Chlorophenol 37. 1,3-Dichlorobenzene 38. 1,4-Dichlorobenzene 39. 1,2-Dichlorobenzene 49. 1,2-Dichlorobenzene 40. 2-Methylphenol 41. 2,2'-oxybis(1-Chloropropane) 42. 4-Methylphenol 43. N-Nitroso-di-n-propylamine 44. Hexachloroethane 45. Nitrobenzene 46. Isophorone 47. 2-Nitrophenol 48. 2,4-Dimethylphenol 49. bis(2-Chloroethoxy) methane 49. bis(2-Chlorophenol	10	330 330 330 330 330 330 330 330 330 330 330 330 330 330 330 330 330 330	98. alpha-BHC 99. beta-BHC 100. delta-BHC 101. gamma-BHC (Lindane) 102. Heptachlor 103. Aldrin 104. Heptachlor epoxide 105. Endosulfan I 106. Dieldrin 107. 4,4'-DDE 108. Endrin 109. Endosulfan II 110. 4,4'-DDD 111. Endosulfan sulfate 112. 4,4'-DDT 113. Methoxychlor	ug/L . 0.05	1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 3.3 3.3 3.3 3.3 3.3 17.0
4. Hexachlorobutadiene 10 330 117. gamma-Chlordane 0.05 1.7 5. 4-Chloro-3-methylphenol 10 330 118. Toxaphene 5.0 170.0 6. 2-Methylnaphthalene 10 330 119. Aroclor-1016 1.0 33.0 7. Hexachlorocyclopentadiene 10 330 120. Aroclor-1221 2.0 67.0 8. 2,4,6-Trichlorophenol 10 330 121. Aroclor-1232 1.0 33.0 9. 2,4,5-Trichlorophenol 25 800 122. Aroclor-1242 1.0 33.0 0. 2-Chloronaphthalene 10 330 123. Aroclor-1248 1.0 33.0 1. 2-Nitroaniline 25 800 124. Aroclor-1254 1.0 33.0	4. Phenol 5. bis(2-Chloroethyl) ether 6. 2-Chlorophenol 7. 1,3-Dichlorobenzene 8. 1,4-Dichlorobenzene 9. 1,2-Dichlorobenzene 0. 2-Methylphenol 1. 2,2'-oxybis(1-Chloropropane) 2. 4-Methylphenol 3. N-Nitroso-di-n-propylamine 4. Hexachloroethane 5. Nitrobenzene 6. Isophorone 7. 2-Nitrophenol 8. 2,4-Dimethylphenol 9. bis(2-Chloroethoxy) methane 0. 2,4-Dichlorophenol 1. 1,2,4-Trichlorobenzene	10	330 330 330 330 330 330 330 330 330 330 330 330 330 330 330 330 330 330 330	98. alpha-BHC 99. beta-BHC 100. delta-BHC 101. gamma-BHC (Lindane) 102. Heptachlor 103. Aldrin 104. Heptachlor epoxide 105. Endosulfan I 106. Dieldrin 107. 4,4'-DDE 108. Endrin 109. Endosulfan II 110. 4,4'-DDD 111. Endosulfan sulfate 112. 4,4'-DDT 113. Methoxychlor 114. Endrin ketone	ug/L . 0.05	1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3
5. 4-Chloro-3-methylphenol 10 330 118. Toxaphene 5.0 170.0 6. 2-Methylnaphthalene 10 330 119. Aroclor-1016 1.0 33.0 7. Hexachlorocyclopentadiene 10 330 120. Aroclor-1221 2.0 67.0 8. 2,4,6-Trichlorophenol 10 330 121. Aroclor-1232 1.0 33.0 9. 2,4,5-Trichlorophenol 25 800 122. Aroclor-1242 1.0 33.0 0. 2-Chloronaphthalene 10 330 123. Aroclor-1248 1.0 33.0 1. 2-Nitroaniline 25 800 124. Aroclor-1254 1.0 33.0	4. Phenol 5. bis(2-Chloroethyl) ether 6. 2-Chlorophenol 7. 1,3-Dichlorobenzene 8. 1,4-Dichlorobenzene 9. 1,2-Dichlorobenzene 0. 2-Methylphenol 1. 2,2'-oxybis(1-Chloropropane) 2. 4-Methylphenol 3. N-Nitroso-di-n-propylamine 4. Hexachloroethane 5. Nitrobenzene 6. Isophorone 7. 2-Nitrophenol 8. 2,4-Dimethylphenol 9. bis(2-Chloroethoxy) methane 0. 2,4-Dichlorophenol 1. 1,2,4-Trichlorobenzene 2. Naphthalene	10	330 330	98. alpha-BHC 99. beta-BHC 100. delta-BHC 101. gamma-BHC (Lindane) 102. Heptachlor 103. Aldrin 104. Heptachlor epoxide 105. Endosulfan I 106. Dieldrin 107. 4,4'-DDE 108. Endrin 109. Endosulfan II 110. 4,4'-DDD 111. Endosulfan sulfate 112. 4,4'-DDT 113. Methoxychlor 114. Endrin ketone 115. Endrin aldehyde	ug/L . 0.05	1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3
6. 2-Methylnaphthalene 10 330 119. Aroclor-1016 1.0 33.0 7. Hexachlorocyclopentadiene 10 330 120. Aroclor-1221 2.0 67.0 8. 2,4,6-Trichlorophenol 10 330 121. Aroclor-1232 1.0 33.0 9. 2,4,5-Trichlorophenol 25 800 122. Aroclor-1242 1.0 33.0 0. 2-Chloronaphthalene 10 330 123. Aroclor-1248 1.0 33.0 1. 2-Nitroaniline 25 800 124. Aroclor-1254 1.0 33.0	4. Phenol 5. bis(2-Chloroethyl) ether 6. 2-Chlorophenol 7. 1,3-Dichlorobenzene 8. 1,4-Dichlorobenzene 9. 1,2-Dichlorobenzene 0. 2-Methylphenol 1. 2,2'-oxybis(1-Chloropropane) 2. 4-Methylphenol 3. N-Nitroso-di-n-propylamine 4. Hexachloroethane 5. Nitrobenzene 6. Isophorone 7. 2-Nitrophenol 8. 2,4-Dimethylphenol 9. bis(2-Chloroethoxy) methane 0. 2,4-Dichlorophenol 1. 1,2,4-Trichlorobenzene 2. Naphthalene 3. 4-Chloroaniline	10	330 330	98. alpha-BHC 99. beta-BHC 100. delta-BHC 101. gamma-BHC (Lindane) 102. Heptachlor 103. Aldrin 104. Heptachlor epoxide 105. Endosulfan I 106. Dieldrin 107. 4,4'-DDE 108. Endrin 109. Endosulfan II 110. 4,4'-DDD 111. Endosulfan sulfate 112. 4,4'-DDT 113. Methoxychlor 114. Endrin ketone 115. Endrin aldehyde 116. alpha-Chlordane	ug/L . 0.05	1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 3.3 3.3 3.3 3.3 3.3 3.3 3.3 1.7
7. Hexachlorocyclopentadiene 10 330 120. Aroclor-1221 2.0 67.0 8. 2,4,6-Trichlorophenol 10 330 121. Aroclor-1232 1.0 33.0 9. 2,4,5-Trichlorophenol 25 800 122. Aroclor-1242 1.0 33.0 0. 2-Chloronaphthalene 10 330 123. Aroclor-1248 1.0 33.0 1. 2-Nitroaniline 25 800 124. Aroclor-1254 1.0 33.0	4. Phenol 5. bis(2-Chloroethyl) ether 6. 2-Chlorophenol 7. 1,3-Dichlorobenzene 8. 1,4-Dichlorobenzene 9. 1,2-Dichlorobenzene 0. 2-Methylphenol 1. 2,2'-oxybis(1-Chloropropane) 2. 4-Methylphenol 3. N-Nitroso-di-n-propylamine 4. Hexachloroethane 5. Nitrobenzene 6. Isophorone 7. 2-Nitrophenol 8. 2,4-Dimethylphenol 9. bis(2-Chloroethoxy) methane 0. 2,4-Dichlorophenol 1. 1,2,4-Trichlorobenzene 2. Naphthalene 3. 4-Chloroaniline 4. Hexachlorobutadiene	10	330 330	98. alpha-BHC 99. beta-BHC 100. delta-BHC 101. gamma-BHC (Lindane) 102. Heptachlor 103. Aldrin 104. Heptachlor epoxide 105. Endosulfan I 106. Dieldrin 107. 4,4'-DDE 108. Endrin 109. Endosulfan II 110. 4,4'-DDD 111. Endosulfan sulfate 112. 4,4'-DDT 113. Methoxychlor 114. Endrin ketone 115. Endrin aldehyde 116. alpha-Chlordane	ug/L . 0.05	1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 3.3 3.3 3.3 3.3 3.3 3.3 17.0 3.3 1.7 1.7
8. 2,4,6-Trichlorophenol 10 330 121. Aroclor-1232 1.0 33.0 9. 2,4,5-Trichlorophenol 25 800 122. Aroclor-1242 1.0 33.0 0. 2-Chloronaphthalene 10 330 123. Aroclor-1248 1.0 33.0 1. 2-Nitroaniline 25 800 124. Aroclor-1254 1.0 33.0	4. Phenol 5. bis(2-Chloroethyl) ether 6. 2-Chlorophenol 7. 1,3-Dichlorobenzene 8. 1,4-Dichlorobenzene 9. 1,2-Dichlorobenzene 0. 2-Methylphenol 1. 2,2'-oxybis(1-Chloropropane) 2. 4-Methylphenol 3. N-Nitroso-di-n-propylamine 4. Hexachloroethane 5. Nitrobenzene 6. Isophorone 7. 2-Nitrophenol 8. 2,4-Dimethylphenol 9. bis(2-Chloroethoxy) methane 0. 2,4-Dichlorophenol 1. 1,2,4-Trichlorobenzene 2. Naphthalene 3. 4-Chloroaniline 4. Hexachlorobutadiene 5. 4-Chloro-3-methylphenol	10	330 330	98. alpha-BHC 99. beta-BHC 100. delta-BHC 101. gamma-BHC (Lindane) 102. Heptachlor 103. Aldrin 104. Heptachlor epoxide 105. Endosulfan I 106. Dieldrin 107. 4,4'-DDE 108. Endrin 109. Endosulfan II 110. 4,4'-DDD 111. Endosulfan sulfate 112. 4,4'-DDT 113. Methoxychlor 114. Endrin ketone 115. Endrin aldehyde 116. alpha-Chlordane 117. gamma-Chlordane 118. Toxaphene	ug/L . 0.05	1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 3.3 3.3 3.3 3.3 3.3 3.3 1.7 1.7 1.7
9. 2,4,5-Trichlorophenol 25 800 122. Aroclor-1242 1.0 33.0 0. 2-Chloronaphthalene 10 330 123. Aroclor-1248 1.0 33.0 1. 2-Nitroaniline 25 800 124. Aroclor-1254 1.0 33.0	4. Phenol 5. bis(2-Chloroethyl) ether 6. 2-Chlorophenol 7. 1,3-Dichlorobenzene 8. 1,4-Dichlorobenzene 9. 1,2-Dichlorobenzene 0. 2-Methylphenol 1. 2,2'-oxybis(1-Chloropropane) 2. 4-Methylphenol 3. N-Nitroso-di-n-propylamine 4. Hexachloroethane 5. Nitrobenzene 6. Isophorone 7. 2-Nitrophenol 8. 2,4-Dimethylphenol 9. bis(2-Chloroethoxy) methane 0. 2,4-Dichlorophenol 1. 1,2,4-Trichlorobenzene 2. Naphthalene 3. 4-Chloroaniline 4. Hexachlorobutadiene 5. 4-Chloro-3-methylphenol 6. 2-Methylnaphthalene	10	330 330	98. alpha-BHC 99. beta-BHC 100. delta-BHC 101. gamma-BHC (Lindane) 102. Heptachlor 103. Aldrin 104. Heptachlor epoxide 105. Endosulfan I 106. Dieldrin 107. 4,4'-DDE 108. Endrin 109. Endosulfan II 110. 4,4'-DDD 111. Endosulfan sulfate 112. 4,4'-DDT 113. Methoxychlor 114. Endrin ketone 115. Endrin aldehyde 116. alpha-Chlordane 117. gamma-Chlordane 118. Toxaphene 119. Aroclor-1016	ug/L . 0.05	1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 3.3 3.3 3.3 3.3 3.3 3.3 3.3 17.0 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 3.3
0. 2-Chloronaphthalene 10 330 123. Aroclor-1248 1.0 33.0 1. 2-Nitroaniline 25 800 124. Aroclor-1254 1.0 33.0	44. Phenol 55. bis(2-Chloroethyl) ether 66. 2-Chlorophenol 67. 1,3-Dichlorobenzene 68. 1,4-Dichlorobenzene 69. 1,2-Dichlorobenzene 69. 1,2-Dichlorobenzene 69. 2-Methylphenol 61. 2,2'-oxybis(1-Chloropropane) 62. 4-Methylphenol 63. N-Nitroso-di-n-propylamine 64. Hexachloroethane 65. Nitrobenzene 66. Isophorone 67. 2-Nitrophenol 68. 2,4-Dimethylphenol 69. bis(2-Chloroethoxy) methane 69. 2,4-Dichlorophenol 61. 1,2,4-Trichlorobenzene 62. Naphthalene 63. 4-Chloroaniline 64. Hexachlorobutadiene 65. 4-Chloro-3-methylphenol 66. 2-Methylnaphthalene 67. Hexachlorocyclopentadiene	10	330 330	98. alpha-BHC 99. beta-BHC 100. delta-BHC 101. gamma-BHC (Lindane) 102. Heptachlor 103. Aldrin 104. Heptachlor epoxide 105. Endosulfan I 106. Dieldrin 107. 4,4'-DDE 108. Endrin 109. Endosulfan II 110. 4,4'-DDD 111. Endosulfan sulfate 112. 4,4'-DDT 113. Methoxychlor 114. Endrin ketone 115. Endrin aldehyde 116. alpha-Chlordane 117. gamma-Chlordane 118. Toxaphene 119. Aroclor-1016 120. Aroclor-1016	ug/L . 0.05	1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 3.3 3.3 3.3 3.3 3.3 3.3 3.3 17.0 3.3 17.0 1.7
1. 2-Nitroaniline	34. Phenol 35. bis(2-Chloroethyl) ether 36. 2-Chlorophenol 37. 1,3-Dichlorobenzene 38. 1,4-Dichlorobenzene 39. 1,2-Dichlorobenzene 49. 1,2-Dichlorobenzene 40. 2-Methylphenol 41. 2,2'-oxybis(1-Chloropropane) 42. 4-Methylphenol 43. N-Nitroso-di-n-propylamine 44. Hexachloroethane 45. Nitrobenzene 46. Isophorone 47. 2-Nitrophenol 48. 2,4-Dimethylphenol 49. bis(2-Chloroethoxy) methane 49. bis(2-Chlorophenol 51. 1,2,4-Trichlorobenzene 52. Naphthalene 53. 4-Chloroaniline 54. Hexachlorobutadiene 55. 4-Chloro-3-methylphenol 66. 2-Methylnaphthalene 67. Hexachlorocyclopentadiene 68. 2,4,6-Trichlorophenol	10	330 330	98. alpha-BHC 99. beta-BHC 100. delta-BHC 101. gamma-BHC (Lindane) 102. Heptachlor 103. Aldrin 104. Heptachlor epoxide 105. Endosulfan I 106. Dieldrin 107. 4,4'-DDE 108. Endrin 109. Endosulfan II 110. 4,4'-DDD 111. Endosulfan sulfate 112. 4,4'-DDT 113. Methoxychlor 114. Endrin ketone 115. Endrin aldehyde 116. alpha-Chlordane 117. gamma-Chlordane 118. Toxaphene 119. Aroclor-1016 120. Aroclor-1221 121. Aroclor-1232	ug/L . 0.05	1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 3.3 3.3 3.3 3.3 3.3 3.3 3.3 17.0 3.3 17.0 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 33.0 33.0 33.0 33.0
	34. Phenol 35. bis(2-Chloroethyl) ether 36. 2-Chlorophenol 37. 1,3-Dichlorobenzene 38. 1,4-Dichlorobenzene 39. 1,2-Dichlorobenzene 49. 1,2-Dichlorobenzene 40. 2-Methylphenol 41. 2,2'-oxybis(1-Chloropropane) 42. 4-Methylphenol 43. N-Nitroso-di-n-propylamine 44. Hexachloroethane 45. Nitrobenzene 46. Isophorone 47. 2-Nitrophenol 48. 2,4-Dimethylphenol 49. bis(2-Chloroethoxy) methane 50. 2,4-Dichlorophenol 51. 1,2,4-Trichlorobenzene 52. Naphthalene 53. 4-Chloro-3-methylphenol 64. Hexachlorobutadiene 65. 4-Chloro-3-methylphenol 66. 2-Methylnaphthalene 67. Hexachlorocyclopentadiene 68. 2,4,6-Trichlorophenol 69. 2,4,5-Trichlorophenol	. 10	330 330	98. alpha-BHC 99. beta-BHC 100. delta-BHC 101. gamma-BHC (Lindane) 102. Heptachlor 103. Aldrin 104. Heptachlor epoxide 105. Endosulfan I 106. Dieldrin 107. 4,4'-DDE 108. Endrin 109. Endosulfan II 110. 4,4'-DDD 111. Endosulfan sulfate 112. 4,4'-DDT 113. Methoxychlor 114. Endrin ketone 115. Endrin aldehyde 116. alpha-Chlordane 117. gamma-Chlordane 118. Toxaphene 119. Aroclor-1016 120. Aroclor-1221 121. Aroclor-1232 122. Aroclor-1242	ug/L 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.0	1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 3.3 3.3 3.3 3.3 3.3 3.3 3.3 17.0 3.3 17.0 3.3 17.0 3.3 17.0 3.3 3.3 17.0 3.3
2. Dimethylphthalate 10 330 125. Aroclor-1260 1.0 33.0	34. Phenol 35. bis(2-Chloroethyl) ether 36. 2-Chlorophenol 37. 1,3-Dichlorobenzene 38. 1,4-Dichlorobenzene 39. 1,2-Dichlorobenzene 49. 1,2-Dichlorobenzene 40. 2-Methylphenol 41. 2,2'-oxybis(1-Chloropropane) 42. 4-Methylphenol 43. N-Nitroso-di-n-propylamine 44. Hexachloroethane 45. Nitrobenzene 46. Isophorone 47. 2-Nitrophenol 48. 2,4-Dimethylphenol 49. bis(2-Chloroethoxy) methane 50. 2,4-Dichlorophenol 51. 1,2,4-Trichlorobenzene 52. Naphthalene 53. 4-Chloro-3-methylphenol 54. Hexachlorobutadiene 55. 4-Chloro-3-methylphenol 56. 2-Methylnaphthalene 57. Hexachlorocyclopentadiene 58. 2,4,6-Trichlorophenol 59. 2,4,5-Trichlorophenol 50. 2-Chloronaphthalene	10	330 330	98. alpha-BHC 99. beta-BHC 100. delta-BHC 101. gamma-BHC (Lindane) 102. Heptachlor 103. Aldrin 104. Heptachlor epoxide 105. Endosulfan I 106. Dieldrin 107. 4,4'-DDE 108. Endrin 109. Endosulfan II 110. 4,4'-DDD 111. Endosulfan sulfate 112. 4,4'-DDT 113. Methoxychlor 114. Endrin ketone 115. Endrin aldehyde 116. alpha-Chlordane 117. gamma-Chlordane 118. Toxaphene 119. Aroclor-1016 120. Aroclor-1221 121. Aroclor-1232 122. Aroclor-1242	ug/L 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 0.10 1.0 0.10	1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 3.3 3.3 3.3 3.3 3.3 3.3 17.0 3.3 17.0 3.3 1.7 1.7 1.7 170.0 33.0 33.0 33.0 33.0 33.0 33.0 33.0 33.0
	4. Phenol 5. bis(2-Chloroethyl) ether 6. 2-Chlorophenol 7. 1,3-Dichlorobenzene 8. 1,4-Dichlorobenzene 9. 1,2-Dichlorobenzene 9. 1,2-Dichlorobenzene 0. 2-Methylphenol 1. 2,2'-oxybis(1-Chloropropane) 2. 4-Methylphenol 3. N-Nitroso-di-n-propylamine 4. Hexachloroethane 5. Nitrobenzene 6. Isophorone 7. 2-Nitrophenol 8. 2,4-Dimethylphenol 9. bis(2-Chloroethoxy) methane 0. 2,4-Dichlorophenol 1. 1,2,4-Trichlorobenzene 2. Naphthalene 3. 4-Chloroaniline 4. Hexachlorootaniline 4. Hexachlorootaniline 5. 4-Chloro-3-methylphenol 6. 2-Methylnaphthalene 7. Hexachlorocyclopentadiene 8. 2,4,6-Trichlorophenol 9. 2,4,5-Trichlorophenol 0. 2-Chloronaphthalene 1. 2-Nitroaniline	10	330 330	98. alpha-BHC 99. beta-BHC 100. delta-BHC 101. gamma-BHC (Lindane) 102. Heptachlor 103. Aldrin 104. Heptachlor epoxide 105. Endosulfan I 106. Dieldrin 107. 4,4'-DDE 108. Endrin 109. Endosulfan II 110. 4,4'-DDD 111. Endosulfan sulfate 112. 4,4'-DDT 113. Methoxychlor 114. Endrin ketone 115. Endrin aldehyde 116. alpha-Chlordane 117. gamma-Chlordane 118. Toxaphene 119. Aroclor-1016 120. Aroclor-1221 121. Aroclor-1232 122. Aroclor-1248 124. Aroclor-1254	ug/L 0.05 0.05 0.05 0.05 0.05 0.05 0.05 0.0	1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 1.7 3.3 3.3 3.3 3.3 3.3 3.3 17.0 3.3 17.0 3.3 1.7 1.7 170.0 33.0 33.0 33.0 33.0 33.0 33.0 33.0 33.0 33.0 33.0

Specific sample quantitation limits are highly matrix dependent.

The list of target compounds for this service was originally derived from the EPA Priority Pollutant List of 129 compounds. In the years since the inception of the CLP, compounds have been added to and deleted from the Target Compound List, based on advances in analytical methods, evaluation of method performance data, and the needs of the Superfund program.

For drinking water/groundwater type samples, use of the low concentration organic analytical service (water matrix) is recommended. For high hazard organic samples (e.g., drum samples), use of the high concentration organic analytical service is recommended.

METHODS AND INSTRUMENTATION

For semivolatile and pesticide/Aroclor samples, a 1-L water sample is extracted with methylene chloride. For low level semivolatile soil and pesticide/Aroclor soil samples, a 30-g soil sample is extracted with methylene chloride/acetone. For medium level semivolatile soil samples, a 1-g soil sample is extracted with methylene chloride/acetone. For both water and soil samples, the extract is concentrated, subjected to fraction-specific cleanup procedures, and analyzed by GC/MS for semivolatiles or GC/EC for pesticides/Aroclors.

For voltile water samples, 5 mL of water is added to a purge and trap device and purged with an inert gas at room temperature. For volatile low level soil samples, a 5-g aliquot of soil is added to a purge and trap device with 5 mL of reagent water and purged with an inert gas at 40°C. For volatile medium level soil samples, 4 g are extracted with methanol and an aliquot is added to

a purge and trap device. For both water and soil samples, the volatiles purged from the sample are trapped on a solid sorbent. They are subsequently desorbed by rapidly heating the sorbent and then introduced into a GC/MS system. **Table 2** summarizes the instruments and methods used in this analytical service.

DATA DELIVERABLES

Data deliverables for this service include hardcopy data reporting forms and supporting raw data. In addition to the hardcopy deliverable, contract laboratories must submit the same data on diskette. The diskette data are used by EPA to rapidly assess the contractual and technical performance of the laboratory.

The laboratory must submit data to EPA within 35 days (or 14 days for 14-day contracts) of sample receipt. EPA then checks the data for compliance with contract requirements within 10 days and adds the data to a comprehensive database of CLP analytical results. A report of instances of noncompliance is distributed to the laboratory and the Region. The laboratory has 10 days to reconcile defective data and resubmit the data to EPA. EPA then screens the data within 10 days and sends a final report to the laboratory and the Region.

QUALITY ASSURANCE

The quality assurance (QA) process consists of management review and oversight at the planning, implementation, and completion stages of the environmental data collection activity. This process ensures that the data provided are of the quality required.

Table 2.	Instruments	and	Methods	š
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Fraction	Instrument	Method
Volatiles	GC/MS with purge and trap device	Purge and trap concentration followed by GC/MS analysis
Semivolatiles	GC/MS	Liquid-liquid extraction followed by capillary GC/MS analysis
Pesticides/Aroclors	GC/EC with dual column	Liquid-liquid extraction followed by capillary GC/EC analysis

During the implementation of the data collection effort, QA activities ensure that the quality control (QC) system is functioning effectively, and that the deficiencies uncovered by the QC system are corrected. After environmental data are collected, QA activities focus on assessing the quality of data to determine its suitability to support enforcement or remedial decisions Each contract laboratory prepares a quality assurance plan (QAP) with the objective of providing sound analytical chemical measurements. The QAP must specify the policies, organization, objectives, and functional guidelines, as well as the QA and QC activities designed to achieve the data quality requirements for this analytical service.

QUALITY CONTROL

The analytical data acquired from QC procedures are used to estimate and evaluate the analytical results and to determine the necessity for or the effect of corrective action procedures. The QC process includes those activities required during analytical data collection to

produce the desired data quality and to document the quality of the collected data. The QC operations required for this analytical service are shown in **Table 3.**

PERFORMANCE MONITORING ACTIVITIES

Laboratory performance monitoring activities are provided primarily by AOC and the Regions to ensure that contract laboratories are producing data of the appropriate quality. EPA performs on-site laboratory audits, data package audits and GC/MS tape audits, and evaluates laboratory performance through the use of blind performance evaluation samples.

For more information on this analytical service, contact:

Howard Fribush Organic Program Manager USEPA/AODQC 401 M Street, SW (5204G) Washington, DC 20460 703 603-8831 FAX: 703 603-9112

Table 3. Frequency of QC Operations

QC Operation	Frequency
Surrogates (for semivolatiles and pesticides)	Added to each sample, standard, and blank
System monitoring compounds (volatiles)	Added to each sample, standard, and blank
Method blanks (volatiles)	Prepared each 20 samples for each matrix and level
Method blanks (semivolatiles and pesticides)	Prepared with each group of samples of same matrix and level, each time samples are extracted
Storage blanks (volatiles)	Prepared and stored with each group of samples received from the field
GC/MS mass calibration and ion abundance patterns (volatiles and semivolatiles)	Every 12 hours, for each instrument used for analysis

QC Operation	Frequency
GC resolution check (pesticides)	Prior to initial calibration, on each instrument used for analysis
Initial calibration	Upon initial set up of each instrument, and each time continuing calibration fails to meet the acceptance criteria
Continuing calibration	Every 12 hours, for each instrument used for analysis
Stability of internal standard responses (volatiles and semivolatiles)	Every analysis
Retention time stability	Every analysis
Matrix spike and matrix spike duplicate	Once every 20 or fewer samples of same fraction, matrix, and level